

Native Sheep Sorbitol Dehydrogenase

Cat. No. NATE-0668

Lot. No. (See product label)

Introduction

Description

Sorbitol dehydrogenase is an enzyme in carbohydrate metabolism converting sorbitol, the sugar alcohol form of glucose, into fructose. Together with aldose reductase, it provides a way for the body to produce fructose from glucose without using ATP. Sorbitol dehydrogenase uses NAD⁺ as a cofactor; its reaction is sorbitol + NAD⁺ → fructose + NADH + H⁺. A zinc ion is also involved in catalysis. Organs that use it most frequently include the liver and seminal vesicle; it is found in all kinds of organisms from bacteria to humans. A secondary use is the metabolism of dietary sorbitol, though sorbitol is known not to be absorbed as well in the intestine as its related compounds glucose and fructose, and is usually found in quite small amounts in the diet (except when used as an artificial sweetener).

Applications

Sorbitol dehydrogenase has been used in a study to investigate osmotic stress induced oxidative damage as a possible mechanism of cataract formation in diabetes.

Synonyms

Sorbitol dehydrogenase; SDH; EC 1.1.1.14; 9028-21-1; polyol dehydrogenase; sorbitol dehydrogenase; L-iditol:NAD⁺ 5-oxidoreductase; L-iditol (sorbitol) dehydrogenase; glucitol dehydrogenase; L-iditol:NAD⁺ oxidoreductase; NAD⁺-dependent sorbitol dehydrogenase; NAD⁺-sorbitol dehydrogenase; L-iditol 2-dehydrogenase

Product Information

Species

Sheep

Source

Sheep liver

Form

lyophilized powder; Contains maltose.

EC Number

EC 1.1.1.14

CAS No.

9028-21-1

Activity

> 20 units/mg protein

Pathway

Fructose and mannose metabolism, organism-specific biosystem (from KEGG) Fructose and mannose metabolism, conserved biosystem (from KEGG) Metabolic pathways, organism-specific biosystem (from KEGG) Pentose and glucuronate interconversions, organism-specific biosystem (from KEGG) Pentose and glucuronate interconversions, conserved biosystem (from KEGG)

Unit Definition

One unit will convert 1.0 μmole of D-fructose to D-sorbitol per min at pH 7.6 at 25°C.

Storage and Shipping Information

Storage

−20°C